



# Federal Aviation Administration

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## Memorandum

Date: April 15, 2013

To: See Distribution List

From: *for* David W. Hempe, Manager, Aircraft Engineering Division, AIR-100 *symCable*

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Subject: TSO-C151c, Terrain Awareness and Warning System (TAWS) Environmental Qualification Language Clarification

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**Purpose:** This policy letter clarifies environmental qualification language in TSO-C151c resulting from recent industry concerns. Specifically, it provides an acceptable set of functional qualification tests to be run during the environmental qualification of TSO-C151 TAWS equipment.

**Background:** TSO-C151c, *Terrain Awareness and Warning Systems*, was published in June 2012 and included template wording for paragraph 3.d., Environmental Qualification. However, it did not specify which subset of functional qualification tests must be conducted during environmental qualification.

**Issue:** Since the revision did not identify the representative subset of functional qualifications to be accomplished during the environmental qualification, manufacturers presumed all functional qualification tests needed to be accomplished, which is not necessary.

**FAA Position:** An acceptable minimum subset of environmental qualification tests is listed in the attached table, Table 1. The FAA will continue to review and accept this subset as part of the TSO authorization process for TSO-C151c. The applicant is still responsible for completing all functional tests in Appendix B of the TSO. However, every functional qualification test is not required to be run against the subset of environmental qualification tests. During environmental tests, the subset of functional qualification tests should continuously exercise all electrical interfaces and electronic components for the most demanding operational mode.

<b>Table 1</b>
Section 4.0 Temperature and Altitude
Section 5.0 Temperature Variation
Section 6.0 Humidity
Section 7.0 Operational Shocks and Crash Safety
Section 8.0 Vibration
Section 9.0 Explosion Proofness
Section 15.0 Magnetic Effect
Section 16.0 Power Input
Section 17.0 Voltage Spike
Section 18.0 Audio Frequency Conducted Susceptibility-Power Inputs
Section 19.0 Induced Signal Susceptibility
Section 20.0 Radio Frequency Susceptibility
Section 21.0 Emission of Radio Frequency Energy
Section 22.0 Lightning Induced Transient Susceptibility
Section 25.0 Electrostatic Discharge

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